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RA Rozenmuller E.H., Tilanus M.G.J.; Submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.  
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RP NUCLEAR LOCALIZATION SIGNAL.  
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RA Addison C., Jenkins J.R., Sturzbecher H.-W.; "The p53 nuclear localisation signal is structurally linked to a P34cdc2 kinase motif"; Oncogene 5:423-426(1990).  
RN [13]

RP MINIMAL REPRESSION DOMAIN.  
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RA Blischoff J.R., Friedlman P.N., Marshak D.R., Prives C., Beach D.; "Human p53 is phosphorylated by P60-cdc2 and cyclin B-cdc2"; Proc. Natl. Acad. Sci. U.S.A. 87:4766-4770(1990).  
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RP VARIANTS LFS CYS-245; TRP-248; PRO-252 AND LYS-258.  
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RN MEDLINE=9429806; PubMed=8023157;  
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RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 97-287 IN COMPLEX WITH 53BP2.  
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RP VARIANT LFS THR-133.  
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RA Law J.C., Strong L.C., Chidambaram A., Ferrell R.E.; "A germ line mutation in exon 5 of the p53 gene in an extended cancer family"; Cancer Res. 51:6385-6387(1991).  
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 RN VARIANT LFS ASP-245.  
 RX MEDLINE=91080929; PubMed=2259385;  
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 RN VARIANT ESOPHAGUS TUMOR V-154; V-245; Q-248; L-278 AND S-278.  
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 RX MEDLINE=91187114; PubMed=167273;  
 RA Bressac B., Kew M., Wands J., Oztruk M., "Selective G to T mutations of p53 gene in hepatocellular carcinoma from southern Africa.", Nature 350:429-431(1991).  
 RL RN  
 RP VARIANT HNSC PHE-176; PHE-242; CYS-245; LEU-248 AND HIS-273.  
 RX MEDLINE=93079399; PubMed=1394255;  
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 RP VARIANT OSCC CYS-205; GLU-281 AND LYS-285.  
 RX MEDLINE=93093190; PubMed=1459726;  
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 RX MEDLINE=93064692; PubMed=137144;  
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 RP VARIANT NASOPHARYNGEAL CARCINOMA THR-280.  
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 RL RN  
 RP VARIANT IN COLON TUMORS.  
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electrophoresis in colorectal tumors.";  
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RN [49] CHARACTERIZATION OF VARIANT ALA-143.  
RP MEDLINE-9428378; PubMed-801344;  
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RN [50] VARIANT LFS HIS-175; ARG-193; GLN-248; CYS-273 AND TYR-275.  
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RX Fraibourg T., Barbier N., Yan Y.-X., Garber J.E., Dreyfus M.,  
RA Fraumeni J.F. Jr., Li F.P., Friend S.H., Birch J.M.,  
RA "Gen-line P53 mutations in 15 families with Li-Fraumeni syndrome.";  
RT Am. J. Hum. Genet. 56:608-615(1995).  
RN [51] VARIANT LFS HIS-175.  
RP MEDLINE-96423319; PubMed-8825920;  
RA Varley J.M., McGraw G., Thorncroft M., Tricker K.J., Teare M.D.,  
SA Santibanez-Koref M.F., Houston R.S., Martin J., Birch J.M.,  
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RL J. Med. Genet. 32:942-945(1995).  
RN [52] VARIANT P53 PHE-176; SER-245; TRP-248; TRP-282 AND GLN-286.  
RP MEDLINE-96243927; PubMed-8829627;  
RA Audrezet M.-P., Robaszekiewicz M., Mercier B., Nousbaum J.-B.,  
RA Hargy E., Balli J.-P., Volant A., Jozac H.P., Gouerou H., Feret C.;  
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RN [53] VARIANT COLORECTAL TUMORS.  
RP MEDLINE-97255965; PubMed-9101296;  
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RN [54] VARIANT COLORECTAL CARCINOMA ILE-157.  
RP MEDLINE-98080146; PubMed-9419979;  
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RA Fukutome A., Tomiyama J., Chuganji Y., Momoi M., Utsunomiya J.;  
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RN [55] VARIANT NONCLASSICAL LFS CYS-327.  
RP MEDLINE-98112421; PubMed-9452042;  
RA Luca J.W., Strong L.C., Hansen M.F.;  
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RT Hum. Mutat. Suppl. 1:558-561(1998).  
CC -1- FUNCTION: Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and cell type. Involved in cell cycle regulation as a trans-activator that acts to negatively regulate cell division by controlling a set of genes required for this process. One of the activated genes is an inhibitor of cyclin-dependent kinases. Apoptosis induction seems to be mediated either by stimulation of BAX and FAS antigen expression, or by repression of Bcl-2 expression.  
CC -1- SUBUNIT: Binds DNA as a homotetramer. In vitro, the interaction of

TP53 with cancer-associated HPV (E6) viral proteins leads to ubiquitination and degradation of TP53 giving a possible model for cell growth regulation. This complex formation requires an additional factor, E6-AP, which stably associates with TP53 in the presence of E6.  
CC -1- SUBCELLULAR LOCATION: Nucleus.  
CC -1- ALTERNATIVE PRODUCTS: 1. (SHOWN HERE) AND 2/19RET; ARE PRODUCED BY ALTERNATIVE SPlicing. ISOFORM 2 SEEMS TO BE NON-FUNCTIONAL IS EXPRESSED IN QUIESCENT LYMPHOCYTES.  
CC -1- PTM: PHOSPHORYLATION ON SER RESIDUES MEDIATES TRANSCRIPTIONAL ACTIVATION.  
CC -1- PTM: DEPHOSPHORYLATED BY PP2A, SV40 SMALL T ANTIGEN INHIBITS THE DEPHOSPHORYLATION BY THE AC FORM OF PP2A.  
CC -1- PTM: O-LINKED GLYCOSYLATION IN THE C-TERMINAL BASIC REGION WAS STUDIED IN EB-1 CELL LINE.  
CC -1- DISEASE: TP53 IS FOUND IN INCREASED AMOUNTS IN A WIDE VARIETY OF TRANSFORMED CELLS. TP53 IS FREQUENTLY MUTATED OR INACTIVATED IN ABOUT 60% OF CANCERS.  
CC -1- DISEASE: DEFECTS IN TP53 ARE ALSO THE CAUSE OF GERMINE CANCERS SUCH AS LI-FRAUENI SYNDROME (LFS). LFS IS AN AUTOSOMAL DOMINANT FAMILIAL CANCER SYNDROME THAT IN ITS CLASSIC FORM IS DEFINED BY THE EXISTENCE OF BOTH A PROBand WITH A SARCOMA AND TWO OTHER FIRST-DEGREE RELATIVES WITH A CANCER BY AGE 45 YEARS. IN THESE FAMILIES THE AFFECTED RELATIVES DEVELOP A DIVERSE SET OF MALIGNANCIES INCLUDING BREAST, CARCINOMAS, SARCOMAS, AND BRAIN TUMORS AT UNUSUALLY EARLY AGES.  
CC -1- DISEASE: VARIANT ALA-143 IS TEMPERATURE SENSITIVE. AT 32.5 DEGREES CELSIUS IT POSSESSES STRONG DNA BINDING ABILITY, BUT AT 37.5 DEGREES CELSIUS ITS TRANSCRIPTIONAL ACTIVITIES ARE GREATLY REDUCED.  
CC -1- DISEASE: DEFECTS IN TP53 ARE ALSO THE CAUSE OF BARRETT'S ADENOCARCINOMAS (BAC). BAC IS A CONDITION IN WHICH THE NORMALLY STRATIFIED SQUAMOUS EPITHELIUM OF THE LOWER ESOPHAGUS IS REPLACED BY A METAPLASTIC COLUMNAR EPITHELIUM. THE CONDITION DEVELOPS AS A COMPLICATION IN APPROXIMATELY 10% OF PATIENTS WITH CHRONIC GASTROESOPHAGEAL REFLUX DISEASE AND PREDISPOSES TO THE DEVELOPMENT OF ESOPHAGEAL ADENOCARCINOMA.  
CC -1- DISEASE: DEFECTS IN TP53 ARE THE CAUSE OF HEAD AND NECK SQUAMOUS CARCINOMAS (HNSC) AND ORAL SQUAMOUS CELL CARCINOMAS (OSCC). CIGARETTE SMOKE IS A PRIME MUTAGENIC AGENT IN CANCER OF THE AERODIGESTIVE TRACT.  
CC -1- SIMILARITY: BELONGS TO THE P53 FAMILY.  
CC -1- DATABASE: NAME=HotMoleBase; NOTE=P53 entry;  
WWW="http://bioinformatics.weizmann.ac.il/~hotmolebase/entries/p53.htm".  
CC -1- DATABASE: NAME=JARC P53;  
CC -1- NOTE=JARC db of somatic p53 mutations;  
WWW="http://www.iarc.fr/p53/homepage.htm".  
CC -1- DATABASE: NAME=Tokyo P53;  
CC -1- NOTE=University of Tokyo db of p53 mutations;  
WWW="http://p53.genome.ad.jp/".  
CC -1- DATABASE: NAME=Prague P53;  
CC -1- NOTE=University of Prague db of germline p53 mutations;  
WWW="http://www.if2.cuni.cz/win/projects/germline\_mut/p53.htm".  
CC -1- DATABASE: NAME=Atlas Genet. Cytogenet. Oncol. Haematol.;  
WWW="http://www.infobiogen.fr/services/chromcancer/Genes/P53ID88.html".  
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CC -1- EMBL; M1695; AAA61212.;  
DR EMBL; M22898; AAA59988.;  
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DR; EMBL; M22896; AA59988.1; JOINED.	FT; VARIANT	87	87
DR; EMBL; M22897; AA59988.1; JOINED.	FT; VARIANT	87	87
DR; EMBL; K03190; AA59989.1; JOINED.	FT; VARIANT	94	94
DR; EMBL; X01405; CAA25632.1; JOINED.	FT; VARIANT	110	110
DR; EMBL; M16394; AA61211.1; JOINED.	FT; VARIANT	110	110
DR; EMBL; X02469; CAA26306.1; JOINED.	FT; VARIANT	110	110
DR; EMBL; U94788; AAC12971.1; JOINED.	FT; VARIANT	110	110
DR; EMBL; AF136271; AAC28628.1; JOINED.	FT; VARIANT	110	110
DR; EMBL; AF136210; AAC28628.1; JOINED.	FT; VARIANT	110	110
DR; EMBL; X60012; CAA42621.1; ALT_TERM.	FT; VARIANT	110	110
DR; EMBL; X54156; CAA38095.1; ALT_TERM.	FT; VARIANT	113	113
PIR; A5224; A2524.	FT; VARIANT	125	125
PIR; A25397; A25397.	FT; VARIANT	125	125
PIR; B25397; B25397.	FT; VARIANT	126	126
PIR; JTO156; JTO156.	FT; VARIANT	126	126
PDB; 1O1H; 08-MAR-95.	FT; VARIANT	126	126
PDB; 1SNE; A2524.	FT; VARIANT	127	127
PDB; 1SNE; 15-OCT-95.	FT; VARIANT	127	127
PDB; 1SAF; 15-OCT-95.	FT; VARIANT	128	128
PDB; 1SAF; 15-OCT-95.	FT; VARIANT	129	129
PDB; 1SAH; 15-OCT-95.	FT; VARIANT	130	130
PDB; 1SAH; 15-OCT-95.	FT; VARIANT	131	131
PDB; 1SAJ; 15-OCT-95.	FT; VARIANT	131	131
PDB; 1SAJ; 15-OCT-95.	FT; VARIANT	132	132
PDB; 1SAK; 15-OCT-95.	FT; VARIANT	132	132
PDB; 1SAK; 15-OCT-95.	FT; VARIANT	133	133
PDB; 1SAL; 15-OCT-95.	FT; VARIANT	135	135
PDB; 1TSR; 29-JAN-96.	FT; VARIANT	135	135
PDB; 1ATE; 16-JUN-97.	FT; VARIANT	136	136
PDB; 1PES; 07-FEB-95.	FT; VARIANT	136	136
PDB; 1PES; 07-FEB-95.	FT; VARIANT	136	136
PDB; 1TOP; 07-DEC-95.	FT; VARIANT	136	136
PDB; 1YCO; 19-NOV-97.	FT; VARIANT	137	137
PDB; 1YCR; 19-NOV-97.	FT; VARIANT	137	137
PDB; 1YCS; 19-NOV-97.	FT; VARIANT	138	138
PDB; 1AUU; 08-APR-98.	FT; VARIANT	139	139
PDB; 1C28; 24-JAN-01.	FT; VARIANT	140	140
DR; TRANSFAC; T00571; SWISS-2DPAGE; P04537; HUMAN.	FT; VARIANT	141	141
DR; Genew; HGNC:11998; TP53.	FT; VARIANT	141	141
DR; MIM: 151623; DR; InterPro; IPR002117; P53.	FT; VARIANT	141	141
DR; PFM; PF00870; P53SUPPRESSR.	FT; VARIANT	143	143
DR; PRODM; P00381; P53; 1.	FT; VARIANT	144	144
DR; PROST; PS00048; P53; 1.	FT; VARIANT	144	144
KW; Anti-oncogene; DNA-binding; Transcription regulation; Activator;	FT; VARIANT	145	145
KW; Nuclear protein; Phosphorylation; Glycoprotein; Apoptosis;	FT; VARIANT	145	145
KW; Alternative splicing; Disease mutation; Polymorphism; 3D-structure;	FT; VARIANT	145	145
KW; Li-Fraumeni syndrome; TRANSCRIPTION ACTIVATION (ACIDIC).	FT; VARIANT	145	145
FT; DOMAIN 1.44	FT; VARIANT	145	145
FT; DNA-BIND 1.02 292	FT; VARIANT	145	145
FT; DOMAIN 325 356	FT; VARIANT	145	145
FT; DOMAIN 368 387	FT; VARIANT	145	145
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FT; DOMAIN 339 346	FT; VARIANT	145	145
FT; MOD_RES 315 315	FT; VARIANT	145	145
FT; MOD_RES 392 392	FT; VARIANT	145	145
FT; VARSPLIC 332 341	FT; VARIANT	145	145
FT; VARSPLIC 342 393	FT; VARIANT	145	145
FT; VARSPLIC 7 7	FT; VARIANT	145	145
D -> H (IN A SKIN TUMOR).	FT; VARIANT	145	145
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L -> F (IN A LIVER TUMOR).	FT; VARIANT	145	145
/FTID=VAR_005852.	FT; VARIANT	145	145
L -> S (IN A RENAL TUMOR).	FT; VARIANT	145	145
/FTID=VAR_005853.	FT; VARIANT	145	145
W -> C (IN A LEUKEMIA AND A LYMPHOMA).	FT; VARIANT	145	145
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P -> S (IN A LEUKEMIA AND A LYMPHOMA).	FT; VARIANT	145	145
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P -> R.	FT; VARIANT	145	145
/FTID=VAR_005892.	FT; VARIANT	145	145
L -> Q (IN A ESOPHAGUS TUMOR).	FT; VARIANT	145	145
/FTID=VAR_005890.	FT; VARIANT	145	145
P -> D (IN A OVARY TUMOR).	FT; VARIANT	145	145
/FTID=VAR_005889.	FT; VARIANT	145	145
C -> P (IN A BRAIN TUMOR).	FT; VARIANT	145	145
L -> P (IN A PROSTATE TUMOR).	FT; VARIANT	145	145
/FTID=VAR_005892.	FT; VARIANT	145	145

FT VARIANT 149 149 S -> P (IN A BREAST TUMOR).  
 FT FT /FTId=VAR\_005893.  
 FT VARIANT 151 151 P -> A (IN A BRAIN AND A COLON TUMOR).  
 FT FT /FTId=VAR\_005894.  
 FT VARIANT 151 151 P -> S (IN MANY TYPES OF TUMORS).  
 FT FT /FTId=VAR\_005895.  
 FT VARIANT 151 151 P -> T (IN A BREAST TUMOR).  
 FT FT /FTId=VAR\_005896.  
 FT VARIANT 152 152 P -> L (IN A ESOPHAGUS TUMOR).  
 FT FT /FTId=VAR\_005897.  
 FT VARIANT 152 152 P -> S (IN OSCC).  
 FT FT /FTId=VAR\_005898.  
 FT VARIANT 153 153 P -> T (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005899.  
 FT VARIANT 154 154 G -> V (IN ESOPHAGUS TUMOR).  
 FT FT /FTId=VAR\_005900.  
 FT VARIANT 155 155 T -> A (IN A ESOPHAGUS TUMOR).  
 FT FT /FTId=VAR\_005901.  
 FT VARIANT 156 156 R -> P (IN AN OSTEOSARCOMA CELL LINE).  
 FT FT /FTId=VAR\_005902.  
 FT VARIANT 157 157 V -> D (IN A LIVER TUMOR).  
 FT FT /FTId=VAR\_005903.  
 FT VARIANT 157 157 V -> I (IN COLONRECTAL CARCINOMA FROM A  
 FT PATIENT WITH TURCOT SYNDROME).  
 FT FT /FTId=VAR\_012977.  
 FT VARIANT 157 157 V -> S (IN A S. AFRICAN HEPATOCELLULAR  
 CARCINOMA).  
 FT FT /FTId=VAR\_005904.  
 FT VARIANT 158 158 R -> C (IN A NONINVASIVE HEAD AND NECK  
 FT TUMOR).  
 FT FT /FTId=VAR\_005905.  
 FT VARIANT 158 158 R -> G (IN A BRAIN AND A LUNG TUMOR).  
 FT FT /FTId=VAR\_005906.  
 FT VARIANT 158 158 R -> H (IN A MANY TYPES OF TUMORS).  
 FT FT /FTId=VAR\_005907.  
 FT VARIANT 160 160 M -> I (IN A LUNG AND A SKIN TUMOR).  
 FT FT /FTId=VAR\_005908.  
 FT VARIANT 161 161 A -> S (IN A BRAIN TUMOR).  
 FT FT /FTId=VAR\_005909.  
 FT VARIANT 162 162 I -> S (IN A BRAIN TUMOR).  
 FT FT /FTId=VAR\_005910.  
 FT VARIANT 162 162 I -> V (IN A OVARY TUMOR).  
 FT FT /FTId=VAR\_005911.  
 FT VARIANT 163 163 V -> H (IN HNSC).  
 FT FT /FTId=VAR\_005912.  
 FT VARIANT 164 164 K -> N (IN A LONG TUMOR).  
 FT FT /FTId=VAR\_005913.  
 FT VARIANT 164 164 K -> Q (IN A BRAST TUMOR).  
 FT FT /FTId=VAR\_005914.  
 FT VARIANT 165 165 Q -> L (IN A BREAST TUMOR).  
 FT FT /FTId=VAR\_005915.  
 FT VARIANT 165 165 Q -> R (IN A OVARY TUMOR).  
 FT FT /FTId=VAR\_005916.  
 FT VARIANT 166 166 S -> L (IN A LUNG TUMOR).  
 FT FT /FTId=VAR\_005917.  
 FT VARIANT 168 168 H -> R (IN A BRAIN TUMOR).  
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 FT VARIANT 169 169 M -> I (IN OSCC).  
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 FT VARIANT 169 169 M -> T (IN A NONINVASIVE HEAD AND NECK  
 FT TUMOR).  
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 FT VARIANT 170 170 T -> M (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005921.  
 FT VARIANT 170 170 T -> S (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005922.  
 FT VARIANT 172 172 V -> A (IN A PROSTATE TUMOR).  
 FT FT /FTId=VAR\_005923.  
 FT VARIANT 173 173 V -> E (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005924.  
 FT VARIANT 173 173 V -> L (IN A CERVICAL CARCINOMA).  
 FT FT /FTId=VAR\_005925.  
 FT VARIANT 173 173 V -> M (IN A COLON TUMOR).

FT VARIANT 174 174 /FTId=VAR\_005926.  
 FT FT R -> H (IN THE CELL LINE DETROIT 562  
 OF SQUAMOUS CELL CARCINOMA).  
 FT FT R -> C (IN A COLON AND AN UTERUS TUMOR).  
 FT FT /FTId=VAR\_005927.  
 FT FT R -> G (IN A BRAIN TUMOR).  
 FT FT /FTId=VAR\_005928.  
 FT FT R -> L (IN A BREAST AND A COLON TUMOR).  
 FT FT /FTId=VAR\_005929.  
 FT FT R -> L (IN A BREAST AND A COLON TUMOR).  
 FT FT /FTId=VAR\_005930.  
 FT VARIANT 175 175 /FTId=VAR\_005931.  
 FT FT R -> P (IN A CERVICAL CARCINOMA).  
 FT FT /FTId=VAR\_005932.  
 FT VARIANT 175 175 /FTId=VAR\_005933.  
 FT FT C -> W (IN A LUNG TUMOR).  
 FT FT /FTId=VAR\_005934.  
 FT FT R -> L (IN A SKIN TUMOR).  
 FT FT /FTId=VAR\_005935.  
 FT FT H -> HHP (IN A BURKITT'S LYMPHOMA).  
 FT FT /FTId=VAR\_005936.  
 FT FT R -> L (IN A CERVICAL CARCINOMA).  
 FT FT /FTId=VAR\_005937.  
 FT FT C -> S (IN A STOMACH TUMOR).  
 FT FT /FTId=VAR\_005938.  
 FT FT D -> Y (IN A LEUKEMIA AND A LYMPHOMA).  
 FT FT /FTId=VAR\_005939.  
 FT FT D -> Y (IN A BREAST TUMOR).  
 FT FT /FTId=VAR\_005940.  
 FT FT G -> C (IN A BREAST TUMOR).  
 FT FT /FTId=VAR\_005941.  
 FT FT G -> S (IN A LEUKEMIA AND A LYMPHOMA).  
 FT FT /FTId=VAR\_005942.  
 FT FT A -> P (IN AN OVARY TUMOR).  
 FT FT /FTId=VAR\_005943.  
 FT FT P -> L (IN A COLORECTAL TUMOR).  
 FT FT /FTId=VAR\_005944.  
 FT FT P -> T (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005945.  
 FT FT Q -> R (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005946.  
 FT FT H -> D (IN AN UTERUS TUMOR).  
 FT FT /FTId=VAR\_005947.  
 FT FT H -> R (IN LFS)  
 FT FT /FTId=VAR\_005948.  
 FT FT L -> P (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005949.  
 FT FT E -> K (IN HNSC).  
 FT FT /FTId=VAR\_005950.  
 FT FT V -> M (IN HNSC).  
 FT FT /FTId=VAR\_005951.  
 FT FT Y -> C (IN OSCC).  
 FT FT /FTId=VAR\_005952.  
 FT FT Y -> D (IN HNSC).  
 FT FT /FTId=VAR\_005954.  
 FT FT R -> Q (IN A BURKITT'S LYMPHOMA AND A  
 COLORRECTAL TUMOR).  
 FT FT /FTId=VAR\_005955.  
 FT FT V -> M (IN HNSC).  
 FT FT /FTId=VAR\_005956.  
 FT FT Y -> C (IN OSCC).  
 FT FT /FTId=VAR\_005957.  
 FT FT V -> H (IN A COLON TUMOR).  
 FT FT /FTId=VAR\_005958.  
 FT FT Y -> S (IN HNSC).  
 FT FT /FTId=VAR\_005959.  
 FT FT D -> E (IN HNSC).  
 FT FT /FTId=VAR\_005960.

FT	VARIANT	230	230	T -> I (IN OSCC). /FTId=VAR_005951. I -> T (IN AN ANAL TUMOR). /FTId=VAR_005962. Y -> C (IN HNSC). /FTId=VAR_005631. Y -> H (IN A BURKITT'S LYMPHOMA). /FTId=VAR_005964. M -> I (IN A COLON TUMOR). /FTId=VAR_005965. C -> F (IN AN ANAL TUMOR). /FTId=VAR_005966. C -> Y (IN A COLORECTAL TUMOR). /FTId=VAR_005967. S -> I (IN AN ANAL TUMOR). /FTId=VAR_005968. S -> P (IN A COLON TUMOR). /FTId=VAR_005969. C -> F (IN A SKIN TUMOR). /FTId=VAR_005970. G -> A (IN A RENAL TUMOR). /FTId=VAR_005971. G -> C (IN LFS; IN OSTEOSARCOMA; COLON AND LARYNX TUMORS). /FTId=VAR_005972. G -> D (IN LFS AND IN A COLON TUMOR). /FTId=VAR_005973. G -> S (IN BA AND MANY TYPES OF TUMORS). /FTId=VAR_005974. G -> V (IN HNSC). /FTId=VAR_005975. M -> R (IN A LIVER TUMOR). /FTId=VAR_005976. M -> T (IN A LEUKEMIA AND A LYMPHOMA). /FTId=VAR_005977. M -> V (IN A MANY TYPES OF TUMORS). /FTId=VAR_005978. N -> W (IN A SKIN TUMOR). /FTId=VAR_005979. N -> I (IN A LUNG TUMOR). R -> G (IN AN ENDOCRINE TUMOR). /FTId=VAR_005981. R -> L (IN HYPOPHARYNX; LARYNX AND TONSIL TUMORS). /FTId=VAR_005982. R -> Q (IN LFS AND IN MANY TYPES OF TUMORS). /FTId=VAR_005983. R -> W (IN LFS, BA AND IN MANY TYPES OF TUMORS). /FTId=VAR_005984. R -> G (IN A BREAST TUMOR). /FTId=VAR_005985. R -> S (IN MANY TYPES OF TUMORS). /FTId=VAR_005986. I -> N (IN HNSC). L -> P (IN LFS AND IN MANY TYPES OF TUMORS). /FTId=VAR_005987. L -> P (IN HNSC). /FTId=VAR_005988. /FTId=VAR_005989. E -> D (IN A COLORECTAL TUMOR). /FTId=VAR_005990. E -> K (IN LFS AND IN BREAST CANCER CELLS). /FTId=VAR_005991. V -> L (IN LFS). /FTId=VAR_005992. R -> C (IN LFS; IN COLORECTAL TUMOR AND OSCCC). /FTId=VAR_005993.	273	273	
FT	VARIANT	232	232	FT	VARIANT	273	273
FT	VARIANT	234	234	FT	VARIANT	273	273
FT	VARIANT	234	234	FT	VARIANT	274	274
FT	VARIANT	237	237	FT	VARIANT	275	275
FT	VARIANT	238	238	FT	VARIANT	275	275
FT	VARIANT	238	238	FT	VARIANT	277	277
FT	VARIANT	240	240	FT	VARIANT	278	278
FT	VARIANT	241	241	FT	VARIANT	278	278
FT	VARIANT	242	242	FT	VARIANT	278	278
FT	VARIANT	245	245	FT	VARIANT	278	278
FT	VARIANT	245	245	FT	VARIANT	278	278
FT	VARIANT	245	245	FT	VARIANT	279	279
FT	VARIANT	245	245	FT	VARIANT	280	280
FT	VARIANT	245	245	FT	VARIANT	280	280
FT	VARIANT	246	246	FT	VARIANT	280	280
FT	VARIANT	246	246	FT	VARIANT	281	281
FT	VARIANT	246	246	FT	VARIANT	281	281
FT	VARIANT	247	247	FT	VARIANT	281	281
FT	VARIANT	247	247	FT	VARIANT	281	281
FT	VARIANT	248	248	FT	VARIANT	281	281
FT	VARIANT	248	248	FT	VARIANT	281	281
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FT	VARIANT	252	252	FT	VARIANT	284	284
FT	VARIANT	257	257	FT	VARIANT	285	285
FT	VARIANT	258	258	FT	VARIANT	285	285
FT	VARIANT	258	258	FT	VARIANT	285	285
FT	VARIANT	272	272	FT	VARIANT	286	286
FT	VARIANT	273	273	FT	VARIANT	286	286

FT VARIANT 286 286 /FTID=VAR\_006028.  
 E -> K (IN MANY TYPES OF TUMORS).  
 /FTID=VAR\_006029.  
 E -> Q (IN BA).  
 /FTID=VAR\_006030.  
 H -> P (IN HNSC).  
 /FTID=VAR\_006031.  
 P -> R (IN A SKIN TUMOR).  
 /FTID=VAR\_006032.  
 P -> L (IN A COLON TUMOR).  
 /FTID=VAR\_006033.  
 G -> E (IN A COLON TUMOR).  
 /FTID=VAR\_006034.  
 G -> V (IN A COLON TUMOR).  
 /FTID=VAR\_006035.  
 R -> Q (IN A SARCOMA).  
 /FTID=VAR\_006036.  
 A -> T (IN A BREAST TUMOR).  
 /FTID=VAR\_006037.  
 P -> S (IN A COLON TUMOR).  
 /FTID=VAR\_006038.  
 G -> V (IN LFS).  
 /FTID=VAR\_006039.  
 G -> V (IN A LONG TUMOR).  
 /FTID=VAR\_006040.  
 R -> C (IN A LIVER TUMOR AND NONCLASSICAL  
 LFS).  
 /FTID=VAR\_006041.  
 C->Y DECREASED EG-MEDIATED BINDING TO  
 FT MOTAGEN 135 135 E6-AP.  
 SQ SEQUENCE 393 AA: 43653 MW: ADC149FD8106131 CRC44;  
 P04637 Length: 393 June 4, 2003 14:14 Type: P Check: 4243  
 Initial Score = 73 Optimized Score = 160 Significance = 0.00  
 Residue Identity = 41% Matches = 174 Mismatches = 208  
 Gaps = 38 Conservative Substitutions = 0  
 10 X 20 30 40 50 60  
 MAQSTATSPDGTTFEHMS--SLEP---DSTYFDLQPSQRGNNEVYGGTDSMDVFFLEGMTTSYMAQFNL  
 70 80 90 100 110 120 130  
 LSSTMDQSSRAASAPSPYTPERAASVPTHSSYAQPSSTEDTSPAPVIPSNTDYPGPHFEYTFQOQSSTAKS  
 110  
 60 DEDPGDDEARRMPAAPPAPAPAA-PTPAPAPAPSPWPLSS---SPDDDEQWET  
 70 MEEPQSDSPVEPLSQETPSDILWKLPPNVLSPSQADDML---SPDDDEQWET  
 10 20 30 40 50 50  
 140 150 160 170 180 190 200 210  
 ATWYSPLUKKLYCQIAKTCPIQIKYSTPPPGTATRAMPVYKKAHYPDVKRCPIHGLDNEQFQASAPA  
 130 VTCYVSPAINKFCQIAKTCPIQIAYDSTPPGTRVRAIAKYSQHMTEVVRCPHE-RCSDSDGLAPP  
 140 150 160 170 180 190 200 210  
 SHLJRVGEVNNLSSOYDDPVTGQSIVTPYEPPOVGETFITYNFMCSVCGMNRPLILITLNRDQ  
 220 230 240 250 260 270 280  
 QHJRVVECNLRYEYDNRNTRHSSVYVPEYGSCTIHYNCMSVCGMNRPLILITLDDSSN  
 200 210 220 230 240 250 260  
 290 300 310 320 330 340 350  
 VLGRSFEGRTCACPGDRKADEDHREQQALNESSAKGAS-KRAFKQSPPAVPALGAGYKRRHGDEDT  
 360 370 380 390 400 410 420  
 YYQVRGENFETLMLKESLMLMELVQPLVQDVSYRQQQQLQRPSHL-----QPPSYGPVLSPMNKHGCM  
 330 340 350 360 370 380 390  
 -LQGRGERFEMFRELINEAELKDRQAGQEPGGSR-----AHSSHJKSKQGSTBRHKKL--MEFTQEGD

174 matches = 2790  
 636 AA = 2790

DB  
 QY =  
 24 from 1-109  
 24 from 310 -7  
 33 from 33 from  
 174-57 = 117

174 from 1-109  
 24 from 310 -7  
 33 from 33 from  
 174-57 = 117